DOCUMENT RESUME

ED 347 332 CE 061 562

TITLE	Toyota/Skyline Technical Education Network. Cooperative Demonstration Program. Final Performance Report.
INSTITUTION	Skyline Coll., San Bruno, Calif.
SPONS AGENCY	Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE	21 Jun 91
CONTRACT	V199A90054
NOTE	41p.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Adult Students; Apprenticeships; *Auto Mechanics; College Programs; *Cooperative Programs; *Curriculum Development; Demonstration Programs; Educational Innovation; Education Work Relationship; Higher Education; Institutional Cooperation; Models; Program Development; Program Effectiveness; Program Evaluation; Program Implementation; *School Business Relationship; Technical Education
IDENTIFIERS	Partnerships in Education; *Skyline College CA; *Toyota

ABSTRACT

A joint project was conducted between Toyota Motor Sales and Skyline College (in the San Francisco, California, area) to create an automotive technician training program that would serve the needs of working adults. During the project, a model high technology curriculum suitable for adults was developed, the quality of instruction available for entry-level technicians was improved, and recruitment efforts for all types of trainees were strengthened. The curriculum developed also had to follow state apprenticeship guidelines and meet the academic requirements of the college. Resistance of a major union local also had to be overcome. The curriculum achieved Automotive Service Excellence certification in all eight possible areas from the National Automotive Technicians Education Foundation. Toyota continues to provide up-to-date training materials, vehicles, and training for instructors, and the college has hired a permanent instructor to continue the project. In addition, the project has begun to interface with area high school auto technology teachers to help them upgrade their skills and to contact potential students. (This project report includes a curriculum description and an outside evaluation that shows that the program has been very successful in meeting its start-up goals and looks as if it will continue and serve as a model.) (KC)

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FINAL REPORT

Cooperative Demonstration Program

Toyota/Skyline

Education Network

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FINAL PERFORMANCE REPORT

PROJECT TITLE: Toyota/Skyline Technical Education Network

AWARD: V199A90054

PROGRAM: Cooperative Demonstration Program (High Technology)

FUNDING AGENCY: Office of Vocational and Adult Education
U.S. Department of Education

FUNDING PERIOD: 12/01/88 TO 08/31/90

FINAL REPORT DATE: June 21, 1991*

GRANT SPECIALIST: Barbara Saunders

U.S. Department of Education
Grant and Contract Services, Grants Division
ROB#3, Room 3653
400 Maryland Avenue, S.W.
Washington, D.C. 20202-4835

* Project Evaluation Questionnaire completed and submitted to COSMOS Corp., February 1991.

CONTENTS OF REPORT

This report is in three parts. Part one is an overview of the project results and an update on progress subsequent to project completion. Part two supplements the overview with a description of the latest curriculum for the Toyota Technical Education Network (T-TEN) training program developed under this grant. Part three is a summative evaluation report of the project prepared by the consulting firm of R.M. Paul & Associates.

The Final Performance Report is accompanied by the Final Financial Status Report, OMB Form 269A.

PROJECT OVERVIEW

The project was a success, but success did not come easily and was not immediately apparent. In fact, when the project concluded there was considerable uncertainty about the future of the new T-TEN program at Skyline College. Union opposition to the intended format prevented many of Toyota's local dealers from participating. A severe and protracted downturn in auto sales discouraged other dealers from hiring students for the work experience portion of the training program. Student enrollment suffered when sufficient jobs could not be provided and other impediments of curriculum format, difficult commutes, and long periods without earnings were encountered. Project efforts were fragmented by part-time management when a suitable full-time director could not be found. Relations between the partners were strained by personality problems and disagreements over curriculum issues and individual responsibilities.

Despite the problems, however, both Toyota and Skyline realized that there was great potential in their relationship and both took major steps to overcome the obstacles that impeded progress. Now, several months later, we finally see the fruits of our labor being born. With the advantage of hindsight and with the opportunity to evaluate the effectiveness of more recent program modifications we can now declare the project a success.

The project's ultimate accomplishments were (a) the creation of a durable public/private training partnership, (b) development of a model high technology curriculum suitable to working adults in a field of strong, long-term employment opportunity, (c) improvement to the quality of instruction available for entry

level technicians, (d) and strengthening of recruitment efforts to attract trainees who are representative of our diverse population.

One important measure of the success for any grant funded project is whether or not what was started with temporary funds can be sustained beyond the funding period. Happily, the partners have renewed their commitment to a long-term training program. Another important measure of success is whether anyone else would try to copy what you've created. We find that other manufacturers are expressing interest in working with Skyline College and that other educational institutions are learning from Skyline's experience. For example, Mazda Motor Inc. and Skyline College are currently negotiating the final terms of an agreement for a training program similar to Toyota's starting spring 1992. Our agreement, only Mazda's second in the USA, will help develop standards for programs with other colleges.

Toyota Motor Sales, its local Toyota Distributor, and their dealers have a clearer understanding of their entry-level needs, have refined the concept of technical education network training, and come to better understand how best to utilize publicly funded educational institutions to meet long range needs for trained technicians. Skyline College has learned important lessons in manufacturer/dealership/employer/union relations, has gained access to upgrade training for faculty, improved the instructional materials and equipment available to students, and strengthened its recruitment efforts among local high schools and regional occupational programs.

Creating a Partnership

The project name, Toyota/Skyline Technical Education Network, indicates a major purpose of the project: the development of a partnership between private and public entities for the purpose of providing entry-level training in the high technology automotive field. Creating the formal partnership was the easy part. Creating the true partnership among the people involved with the qualities of trust, respect, cooperation, commitment and understanding of respective interests and ways of doing things was more difficult. Now, several months after the completion of the project, the partnership is flourishing with major new commitments from both Toyota Motor Sales, USA and Skyline College.

Developing Curriculum

Through this partnership and the funds provided for this project, Skyline College and Toyota Motor Sales have created a curriculum that serves as a model both for content and format. The jointly developed curriculum meets a variety of student/employee and employer needs. A copy of the latest version of that curriculum immediately follows this overview.

Developing a new and innovative curriculum to provide the quality training demanded by the manufacturer/sales company on a schedule suited to working adult students and their auto dealer employers was a daunting task. The program also had to follow state apprenticeship guidelines and meet the academic requirements of the college. The most serious obstacle was the resistance of a major union local to the program format. This resistance prevented about one-half of the available dealerships in the area from participating in the program. The curriculum was revised several times and the union problem was negotiated throughout the project term.

Several months after the project term concluded, Toyota and Skyline made the final revisions that created a program acceptable to all parties -- a first for such manufacturer sponsored apprenticeship training programs in the San Francisco Bay Area. Our success in creating a curriculum that satisfies both the requirements of the T-TEN program and of the union was a deciding factor in Mazda's decision to seek Skyline College as a training partner.

Improving Program Quality

During the project, Skyline College underwent a major review of its entire Auto Tech program. After an extensive evaluation, the program achieved ASE (Automotive Service Excellence) - NATEF (National Automotive Technicians Education Foundation) certification in all eight possible areas. In addition the new Toyota Advisory Committee assisted the college in making a variety of changes in program content to make program graduates more readily employable. Toyota provided and continues to provide substantial donations of up-to-date instructional materials and equipment to the program and provides advanced training for the college instructors. Toyota's contribution to the excellence of Skyline's program has far exceeded expectations stated in the grant proposal.

In just the most recent six months, Toyota has donated approximately $200,000 worth of training materials to the program (about 1/3 more than required under the grant for an 18 month period). Toyota has provided a total of fifteen complete vehicles representative of their entire product line plus a wide variety of additional components. Skyline College, in turn, has hired a full-time, permanent T-TEN instructor to continue the program beyond the initial project term, created dedicated training facilities, and structured a comprehensive program of recruitment, counseling, training, and articulation. All five of the full-time instructors have participated in up-date training at the Toyota Training Center and have introduced these new materials in all courses taught in the department (not just the Toyota-specific courses).

Strengthening Recruitment Efforts

All high school automotive programs in San Mateo County and several from adjacent counties were contacted during the project period. Skyline's representative addressed students in classes, discussed the program with counselors, and surveyed the needs of auto tech instructors. Based on the survey and subsequent meetings with these instructors, Skyline offered them a program of upgrade training and assistance in obtaining up-to-date training materials and equipment. Skyline now publishes a newsletter for its high school and regional occupational program counterparts.

Contact was also made with independent garage owners to survey their employment requirements, satisfaction with Skyline graduates, and to acquaint them with the new Toyota training program. This led to additional employment opportunities for T-TEN and other Auto Tech program students and has strengthened our program's advisory committees.

The latest revisions to program format have made it easier for students, especially those who need to keep earning money while in school, to enter the program and complete it. Counseling and tutoring assistance is readily available and a variety of other services, including child care, have been provided.

Toyota has worked very hard to motivate students to persist in the program by providing scholarship funds, free tool boxes (approx. $1,500 value), and personal follow-up at home and on the job. Toyota has also assisted the college in paying for newspaper advertising, printing brochures, providing recruitment

video material, and setting up and staffing attractive displays at recruitment activities. Toyota staged an elaborate ceremony, including family dinner and awards, for the first program graduates.

TODAY

Toyota has challenged Skyline College to become its model program for T-TEN in the Western United States and Skyline is accepting the challenge! Both partners have support for this effort at the highest levels of management. We both feel we have the right combination of people, curriculum, program quality, and recruitment strategies to realize that goal.

SKYLINE COLLEGE

3300 COLLEGE DRIVE, SAN BRUNO, CALIFORNIA 94066
(415) 738-4440

T-TEN

TOYOTA - TECHNICAL EDUCATION NETWORK

FALL 1991 / SPRING 1992

SPONSORED BY

TOYOTA MOTOR SALES, U.S.A.

TOYOTA TECHNICAL EDUCATION NETWORK AT SKYLINE COLLEGE

WHAT IS THE PURPOSE OF T-TEN?

The T-TEN program at Skyline College is designed to provide entry level technicians, for Toyota Dealerships, who have the basic training, tools and state licenses necessary to begin working in the automotive trade. Course work in the program will be applicable to all union apprenticeship standards and requirements.

WHY T-TEN OVER OTHER AUTO PROGRAMS?

Students can graduate from this program with a Certificate or Degree in Japanese Automotive Technology. Students are provided the opportunity of at least one summer internship working in a sponsoring Toyota Dealership. Graduates can also receive advanced apprenticeship standing at a sponsoring Toyota Dealership. Scholarships are awarded to those who qualify.

WHAT TYPE OF SCHOOL IS SKYLINE?

Skyline College is a fully accredited community college located in San Bruno, California since 1969. Skyline's Automotive Program is both fully A.S.E./N.A.T.E.F. and B.A.R. Certified. Instructors have Toyota factory training and are A.S.E. and B.A.R. certified.

WHAT WILL THE SCHEDULE BE LIKE?

Automotive instruction for this program will be four school semesters over a two year period. Students will attend four days per week, five hours per day. Monday through Thursday from 1 pm to 6 pm, excluding holidays, semester recesses, and other school vacations.

Students will spend their first summer vacation working at a sponsoring Toyota Dealership. Upon successful completion of the first summer work experience a second summer working at a Toyota dealership will be offered.

HOW ARE STUDENTS SELECTED?

Skyline College and Toyota Dealerships will select students into this T-TEN program. Only students enrolled in Skyline's A.I.P. program or already employed by a Toyota dealership are eligible to apply. Those who apply must take the college placement exam, which screens for the minimum Math and English proficiency levels as established by the college. Students must demonstrate both academic competence and mechanical aptitude.

HOW IS A STUDENT ELIGIBLE?

1. Eighteen (18) years of age or older by the time of Toyota dealer sponsorship.
2. Hold a valid California drivers license with good driving record.
3. High school graduate or equivalent.
4. Meet college admission and academic requirements.
5. Sponsorship by a Toyota dealer. (May be arranged through the college.)
6. Must be an enrolled student of the Automotive Industry Program at Skyline, or already employed by a Toyota dealership.

WHAT ARE THE STUDENT RESPONSIBILITIES?

1. Maintain academic standards ('C' or above) and adhere to all academic policies.
2. Maintain regular attendance.
3. Participate in all educational activities.
4. Provide sponsoring dealership with productive employment.
5. Be responsible for program costs: tuition, fees, books, tools, and parking fees.
6. Purchase required tools and have them available during classes and at work.
7. Obtain California Brake, Lamp and Unlimited Smog license prior to graduation.
8. Obtain a minimum of (4) ASE Auto Technician certifications prior to graduation.

TUITION: California Resident (at least one year) Each semester $5.00 per unit up to $50.00 maximum for all units enrolled, plus a $7.50 health fee.

Non-California Resident or Foreign Student (F-1 Visa) Each semester $100.00 per unit for all units enrolled, plus a $7.50 health fee.

TOOLS: A requirement of the program is that students must obtain a basic set of tools. The cost of these tools over the entire program is approximately $1,850. Students will be issued a list of required tools during the program orientation.

BOOKS: A program requirement is the purchase of books and supplies, approximately $100.00 Each semester (on the average).

ARE THERE TOYOTA STUDENT SCHOLARSHIPS? YES!

1. Fees reimbursed for the first attempt at taking A.S.E. certification tests.
2. Fees reimbursed for the first attempt at taking California state licenses.
3. $250 awarded to the top 10 students during the first year. (Includes A.I.P. awards)
4. $125 awarded for all California State licenses (Brake, Lamp, and Unlimited Smog).
5. $125 awarded for the first 4 A.S.E. Auto Technician certifications.
6. Tool sets awarded to graduating students who are sponsored by a Toyota dealership.

WHAT ARE THE GRADUATION REQUIREMENTS?

1. Must have a Toyota dealership sponsor at time of graduation.
2. Must have a successful Toyota dealership summer work experience.
3. Must hold valid California Brake, Lamp, and Unlimited Smog licenses.
4. Must maintain 'C' or better grade in all automotive courses.
5. Must have a minimum of 4 A.S.E. Auto Technician certifications.

WHAT CLASSES WILL I TAKE?

AUTOMOTIVE
Toyota Engines
Toyota Transmissions
Toyota Service Orientation
Toyota Brakes
Toyota Chassis
Toyota Air Conditioning
Toyota Basic Electrical
Toyota Advanced Electrical
Toyota Engine Performance

GENERAL EDUCATION*
American History**
Natural Sciences**
Humanities**
Social Sciences**
Language and Rationality**
Personal Development**

* Courses are optional but highly recommended.
** Classes are chosen from these general areas by students wishing an Associate of Science Degree.

A706 TOYOTA ENGINES
This course involves the basic study of engine design and operation including basic measuring, inspection, diagnosis, and repair. Primary emphasis will be on diagnosis and valve train repair.

A707 TOYOTA TRANSMISSIONS
This course involves the basic study of power-trains, to include clutches, manual and automatic transmissions and transaxles, and differentials. Primary emphasis will be on testing, diagnosis, and repair.

A724 TOYOTA SERVICE ORIENTATION
This course involves the basic study of automotive pre-delivery inspection (PDI) and routine service procedures to include locating rattles, noises, and vibrations, radio installation, lubrication and other basic service procedures. Basic electrical principles and test equipment will also be introduced.

A725 TOYOTA BRAKE SYSTEMS
This course involves the basic study of mechanical and hydraulic brake systems. Emphasis will be on system operation, diagnosis, adjustment, testing, and repair. A.B.S. brake systems will also be discussed. This course will also prepare the student for the California Brake Adjusters License.

A726 TOYOTA CHASSIS
This course involves the basic study of steering, suspension and wheel alignment, to include theory, testing, diagnosis, and repair. Tire balancing, mounting, and repair will also be discussed, with major emphasis on vehicle vibration and 4 wheel alignment.

A727 TOYOTA AIR CONDITIONING
This course involves the basic study of automotive climate controls and components. Principles of heating and air conditioning and the engines cooling system will be discussed. The course covers system evacuating, recycling and recharging of the air conditioning system, with emphasis on testing, diagnosis, and repair.

A728 TOYOTA BASIC ELECTRICAL
This course involves the basic study of electrical fundamentals, automotive batteries, wiring diagrams, starting and charging systems, and lighting systems. Primary emphasis on testing, diagnosis, and repair. This course will prepare the student for the California Lamp Adjusters License.

A729 TOYOTA ADVANCE ELECTRICAL
This course involves the basic study of automotive electronics, body electrical, instrumentation, ignition systems, and basic engine computer controls. Primary emphasis will be on testing, diagnosis, and repair.

A730 TOYOTA ENGINE PERFORMANCE (Approved BAR-90 Clean Air Course)
This course involves the basic study of carburetion, fuel injection, feed back fuel systems, emission control, advanced computer control, and driveability diagnostics. Emphasis will be on testing, diagnosis, and repair. This course will prepare the student for the California Unlimited Smog Check license (BAR 90) for the Motor Vehicle Pollution Control Program.

WHAT IF I NEED FINANCIAL AID?

Skyline College's Financial Aid Program provides assistance to help eligible students cover their educational costs. To be considered for financial aid, students must complete a two-step application process through the Financial Aid Office. (Building 1, Room 1205) Complete information can be obtained by calling 415-738-4236, Monday through Friday.

NOTICE OF DISCLAIMER

Toyota Motor Sales, U.S.A., Toyota Motor Distributors, Toyota dealerships and Skyline College make no claims or guarantees about accepting students into its T-TEN program or employment at a Toyota dealership. Toyota's sponsorship is limited to providing the college with Toyota training vehicles, materials, special tools, and instructor training.

POLICY OF NON-DISCRIMINATION

Skyline College is dedicated to equal opportunity regardless of sex, race, color, religion, national origin, or handicap in its admission and enrollment practices, student services, student activities, financial aid, and employment.

HOW DO I APPLY?

Contact **Kevin R. Sullivan, Skyline College T-TEN Instructor: (415) 738-4440**

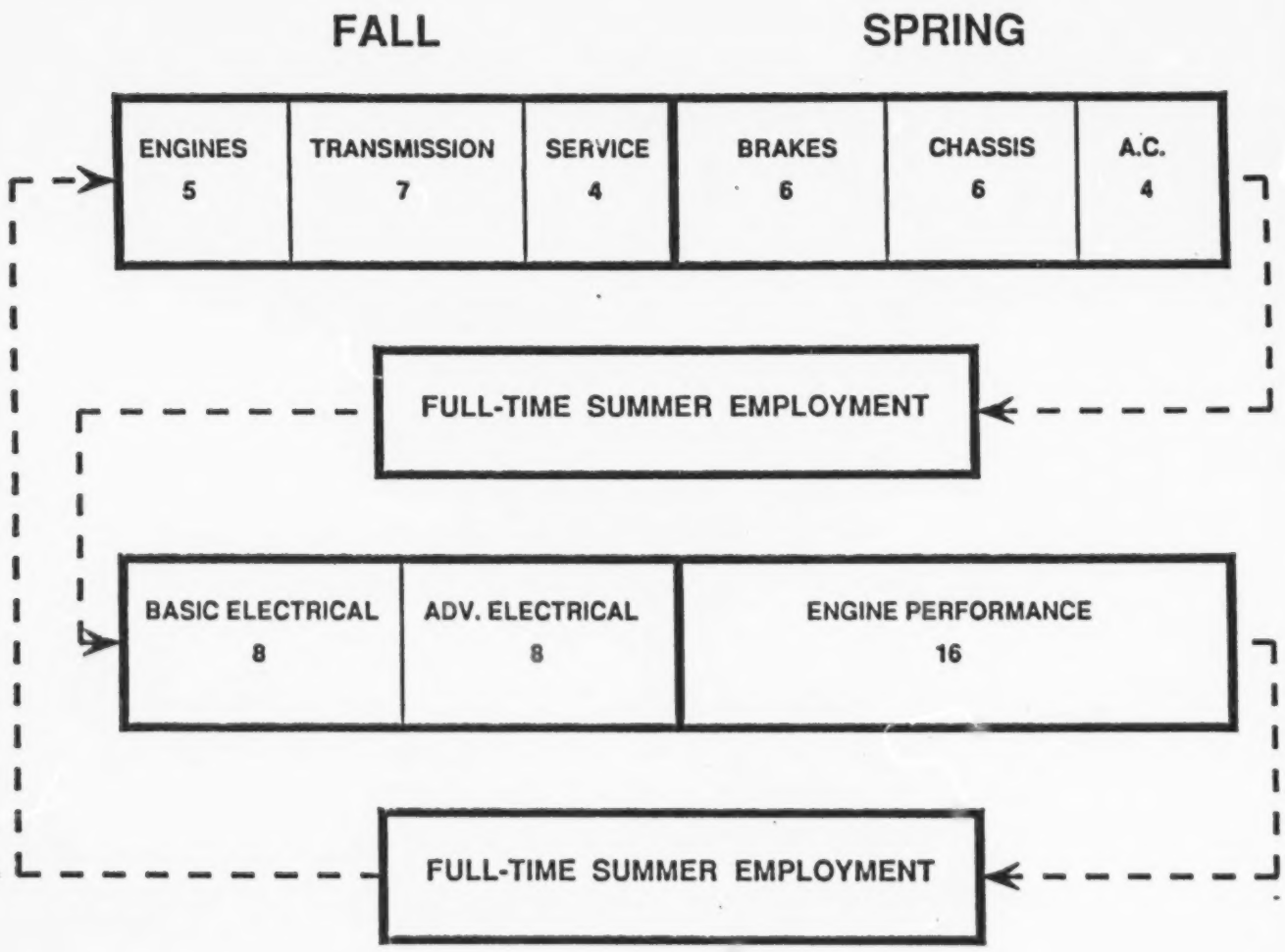
or

Mail in the completed application to: **Skyline College Admissions Office, 3300 College Drive, San Bruno, CA 94066. A complete application includes the following:**

1. Completed application form.
2. Name of sponsoring Toyota Dealership (if already employed by a Toyota dealer)
3. Copy of California Drivers License.
4. Copy of D.M.V. print out of driving record.

Note: Take required college Math/English placement exam prior to enrollment and acceptance.

SKYLINE COLLEGE - TOYOTA T-TEN PROGRAM



ENGINES
1. ENGINE THEORY
2. ADJUSTMENTS
3. REPAIRS
4. COOLING SYS.

TRANSMISSION
1. CLUTCH
2. MANUAL TRANS
3. DIFFERENTIAL
4. AUTO TRANS

SERVICE
1. PDI
2. MAINT.
3. ELEC.

BRAKES
1. DRUM SYS.
2. DISC SYS.
3. A.B.S. SYS.

CHASSIS
1. ALIGNMENT
2. TIRES
3. STEERING
4. SUSPENSION

AIR COND.
1. COOLING
2. HEATING
3. BASIC A.C.

BASIC ELECTRICAL
1. ELEC. PRINCIPLES
2. BATTERIES
3. WIRING DIAGRAMS
4. STARTING SYS.
5. CHARGING SYS.
6. LIGHTING SYS.

ADV. ELECTRICAL
1. ELEC. PRINCIPLES
2. BODY ELECTRICAL
3. INSTRUMENTATION
4. IGNITION SYSTEMS
5. BASIC COMPUTER CONTROL
6. E.C.T. DIAGNOSISTICS

ENGINE PERFORMANCE
1. ENGINE THEORY
2. FUEL SYSTEMS
3. EMISSION CONTROL
4. FEED-BACK FUEL SYSTEMS
5. ADV. COMPUTER CONTROL
6. DRIVEABILITY DIAGNOSIS

REVISED 2/91

U.S. DEPARTMENT OF EDUCATION
OFFICE OF VOCATIONAL AND ADULT EDUCATION
COOPERATIVE DEMONSTRATION PROGRAM (HIGH TECHNOLOGY)
SKYLINE COLLEGE
SUMMATIVE PROGRAM EVALUATION

Project Title:	Toyota/Skyline Technical Education Network
Project Duration:	18 Months
Starting Date:	December, 1988
Ending Date:	June, 1990
PR/Award No:	V199A90054-89
Program Title:	Coop/Demo Program for High Technology Training CFDA 84.199A
Funding Agency:	Office of Vocational and Adult Education, U.S. Department of Education
Amount:	$191,775

Background:

In the spring of 1987 Skyline College was approached by Toyota Motor Sales, USA, to become one of approximately 50 specialized training centers across the country to offer Toyota technical training. The District and the College strongly endorsed the proposed partnership. The College, as a result of this partnership, would receive considerable support from Toyota to include instructional materials, automotive equipment, media equipment, training and upgrading of instructional staff, and scholarship funds. This support, based on performance, would exceed $137,000 during the project period.

The planned program called for the creation of a continuing program to train 3 groups of 20 new automotive technicians per year. The 60 students would be recruited from under-employed and under-represented populations. Students would attend class for three 8-week periods per year for three years to complete the basic skills apprenticeship requirements, general automotive training, and specialized Toyota training. It was planned that Toyota would assist in the recruitment and employment of these students during training and after completion.

As a result of this partnership Skyline College sought funding from the U.S. Department of Education, Office of Educational and Adult Education Cooperative Demonstration Program (High Technology). It was envisioned that, as a part of the Project, nine 8-week training modules would be developed, each consisting of 96 hours of automotive classroom training and up to 48 hours of related basic skills training. This training was to include the most advanced technology of today's auto industry including: electronic fuel injection; electronic transmission controls; anti-lock brake systems; computer controls for steering, suspension and climate; and remote computer diagnosis via telecommunications.

Another important segment under the Demonstration Project was the completion of all eight Automotive Service Excellence (ASE) - National Automotive Education Foundation (NATEF) certification standards. Funds requested under the grant were to be used to hire additional certificated staff and clerical

support personnel to free regular staff to develop this curriculum and to work on the NATEF certification. The grant application was prepared for submission in the spring of 1988 and was approved for funding. The College committed itself the program in the spring of 1988 (prior to receiving grant funds) with the objective of recruiting the first class of 20 students to begin in the fall of 1988. The USDE Cooperative Demonstration Program (High-Tech) Grant was received for the period December 1, 1988 to June 30, 1990 (later extended to August 31, 1990).

Proposal Objectives (as stated in proposal):

A. Nine 8-week training modules will be provided. Each consists of 96 hours of automotive classroom training up to 48 hours of related basic skills training. Learning objectives and evaluation procedures will be established for alternative periods of on-the-job training.

B. Twenty students will be recruited to start the program in 1988 and an additional 20 will be recruited to begin in 1989.

C. Forty work sites for students will be secured: 20 for 1988 and 20 more for 1989.

D. Instruction will begin in the fall of 1988 and two 8-week classroom sessions will be completed by the end of the project period (fall, spring). The completion rate will be 80 percent.

E. The College will complete all eight NATEF (National Automotive Technicians Education Foundation) certifications including: engine repair, auto trans/transaxle, manual trans/transaxle, suspension/steering, brakes, electrical systems, heating and A/C, and engine performance. Appropriate equipment will be acquired to complete equipment requirements.

F. The College will meet with the Joint Apprenticeship Councils and the State Division of Apprenticeship Standards to ensure that the program is approved for apprenticeship credit (as is Skyline's regular day auto tech program).

G. The College and Toyota have formed an Advisory Council of Toyota dealers to provide overall supervision and guidance of the project. This Council will conduct both formative evaluation of the program and share responsibility for summative evaluation.

H. The College will prepare articles for Toyota's T-TEN Newsletter which has national distribution and the NACAT (National Association of College Auto Teachers) Newsletter to share information on the program, including the results of the summative evaluation.

Objective Results as of August 31, 1990:

A. The curriculum format was revised several times during the project based on imput from the Toyota Advisory Committee. Six 8-week training modules were developed, each consisting of 160 hours of automotive classroom training. Some problems were encountered with the offering of related basic skills courses in eight week (one-half semester) formats. This problem reflects primarily the low enrollment into the Toyota classes and the fact that many of the students have previously completed basic skills requirements. Learning objectives and evaluation procedures have been established for the alternate periods of on-the-job training through the use of work site learning objectives and frequent visitations to the work site by the College coordinator.

B. During the summer of 1988 Toyota/Skyline conducted a half-day information seminar attended by over 100 potential students. Of these, 49 enrolled for a two week orientation class. Only 12 dealers participated in the first job fair at the end of the summer orientation and 10 of these hired students. Because Toyota and the local dealerships were unable to provide sufficient job slots, enrollment in the first regular course module the following fall semester was only 14 students. Many of the potential students could

not afford to quit their present employment and attend school full time for two or three 8-week periods annually without any income. Even those students hired by Toyota dealerships were not paid for the 8-week periods in which they attended classes but they did receive fringe benefits, including medical coverage. The unwillingness of dealers to pay students during their period of class attendance became a union/dealer problem for a major segment of Bay Area Toyota dealers. The issue was placed on the agenda for negotiations and had yet to be resolved when this project concluded. The poor dealer participation, the lack of full-time dealership employment, and the class format of three 8-week full-time sessions per year caused the College and Toyota to begin the process of rethinking the program format which underwent several modifications. Only 12 of the first 14 students who started the program in fall 1988 and seven of the eight who started in the fall 1989 were employed in Toyota Dealerships. In both the 1988 and 1989 classes there was a mix of ethnic minorities recruited (Appendix 1). The recruiting process was directed to reach the under-employed and under-utilized populations, a strong college commitment.

C. In the class of 1988, eight additional students were recruited and enrolled in the program, six of whom were

employed in dealerships and two of whom were employed in independent auto repair facilities. Two of those employed by dealers were paid partial salary during their classroom training period. In fall 1989 only nine of the original fourteen students completed the class along with two additional students. Ten of the eleven in the first group were employed by Toyota dealers. The total dealership jobs fell far below the anticipated work sites to be provided by Toyota. In 1989 there was less participation by Toyota dealers than in the previous year. Only four of the original ten dealers employed students from the second group of students who started in fall 1989. No new dealers participated. This can be attributed to the union/dealership problems, a steep decline in auto sales and an auto mechanics strike in the San Jose area which had been participating in the program. Due to the problems outlined in recruitment and lack of sufficient work stations being provided by Toyota, the College took steps to increase enrollment and to provide work sites other than Toyota dealerships. A representative from the College was charged with the responsibility of calling on high schools and non-Toyota automotive facilities publicizing the program. Additionally, articulation meetings were held with all major feeder high schools in the immediate area.

D. Instruction began in the fall of 1988 and during the 21 month project period, five two 8-week classroom sessions and three work experience sessions were completed. An orientation class was held for a second group which began in the fall of 1989. The attrition rate was as follows: 14 students started in fall 1988. Nine students completed and graduated. Eight students started in fall 1989 and seven of these were continuing as the project ended They should graduate in December 1991. All students enrolled in the Toyota program have received career and job placement counseling and five of the total enrolled received special tutoring to overcome difficulties with technical information. Close contact and extra encouragement have been provided by both the College instructional staff and by Toyota's service training specialist.

E. The College has completed the ASE-NATEF self study for certification. The eight areas include: engine repair, auto trans/transaxle, manual trans/transaxle, suspension/steering, brakes, electrical systems, heating and A/C, and engine performance. The necessary equipment to bring the program up to NATEF standards has been ordered and installed. The College has met the requirements under all eight of the NATEF

standards. In the spring of 1990 Skyline College requested a visitation team to evaluate and grant certification.

This visitation took place and full certification was granted to the program.

F. The College has met with the Joint Apprenticeship Councils and the State Division of Apprenticeship Standards and has received their assurance that the new curriculum for the Toyota T-TEN program will be approved for apprenticeship credit so that all students completing the T-TEN program will receive credit towards their journeyman status.

G. The College, from the very early planning stages of the Toyota T-TEN program, had an active advisory committee of Toyota dealers consisting of service managers, master mechanics, and the Toyota Motor Distributor, Inc, serving Northern California including the San Francisco Bay Area. This committee has met regularly, played an active role in the development and evaluation of the new curriculum and in the planning of equipment acquisition and facilities. The advisory committee has played an important role in the ongoing formative evaluation of the project and has provided guidance for the Summative Evaluation Report.

H. The College has regularly prepared information for the Toyota T-TEN newsletter, has participated in a number

of meetings with other colleges sponsoring T-TEN programs and was recently one of 25 colleges invited to a special Toyota meeting in the Los Angeles area. The College administrator responsible for the program, Robert Verzello, was invited to conduct a round table discussion on "The problems and pitfalls of corporate sponsored automotive technician programs" at the American Association of Community and Junior Colleges (AACJA) National Conference in April of 1990. The College regularly publishes a newsletter "Wingnut" for distribution to employers, students, alumni, and other interested parties, which provides information on the program. The College is also planning statewide workshops to disseminate information about this program. Upon completion of the Summative Evaluation, it is planned that an article on the Skyline T-TEN program will be submitted to the National Association of College Automotive Teachers for inclusion in their newsletter. News of the T-TEN program has appeared in several regional news publications and business reports (such as those published by the Bay Area Council).

Other Important Results:

1. The Skyline Automotive Program regularly enrolls over 200 students. Much of the instructional materials, equipment, and media materials made available by Toyota have been used successfully in improving the regular

Skyline Automotive Program. The addition of new equipment and training material supplied by Toyota has provided the impetus for a complete revision and update of the general automotive curriculum.

2. Skyline College hired a new full-time instructor, Mr. Kevin Sullivan, who has the Toyota T-TEN Program as his primary responsibility. He is also working with other manufacturers to start similar programs with Skyline College.

3. Toyota has provided some 280 hours of classroom training for Skyline instructors in their facilities. This training obviously has carried over into the regular auto tech program.

4. The development of new relationships with student services in both automotive student counseling and assessment have increased the number of students enrolled in the regular automotive program.

5. As a direct result of the College's participation in the Toyota T-TEN the College is currently conducting negotiations with its feeder high schools to conduct an ongoing 2+2 program. The College will conduct upgrade training to high school instructors and has assisted them in obtaining new instructional equipment and materials from Toyota and other manufacturers.

6. Because of the support provided by the College's relationship with Toyota in the T-TEN program and

the funding of the Cooperative Demonstration Program Grant, planning is currently underway for the addition of a new building for the Skyline Automotive Program. This is a long overdue upgrade of the automotive program's physical facilities.

Employer/Student Survey:

In order to incorporate in this summative report some of the views and concerns of students and employers participating in the program a mail survey of 17 students and 16 employers was undertaken. This population represents all students and employers in Group I of the Toyota T-TEN Program. After a second follow-up mailing of the student questionnaire (Appendix 2) 10 replies were received and 3 were returned by the Post Office as "undeliverable."

- Questions #1-#4 - All 10 of the replies were from students presently enrolled in the program, all were enrolled between January 1987 and September 1989, and all but one of the respondents were presently employed in the automotive industry.
- Question #5 - Is your present employment the result of your enrollment in the program? Seven of the ten respondents stated their employment was a result of their enrollment in the T-TEN Program.

- Question #6 - Has the program met the commitment promised at time of enrollment? One responded "outstanding," three "very satisfactory," three "satisfactory," two "need improvement," and one "inadequate."
- Question #7 - Has the program provided classroom and hands-on instruction to meet the requirement of your employment? Two responded "outstanding," seven "very satisfactory," and one "satisfactory."
- Question #8: - There were nine responses to the question: Has the program provided tools and equipment the same or similar to that found on your job? Two responded "outstanding," five responded "very satisfactory," and two "satisfactory."
- Question #9: - Has your employer provided additional training and support coordinated with the College? Two responded "outstanding," three "very satisfactory," three "satisfactory," one "needs improvement." and one "inadequate."
- Question #10 - What could be done to improve the Skyline/Toyota Training Program in the future? Seven of the 10 respondents provided the following comments:
  - Students should have more time to work on their own cars.
  - Students need more time to exchange information and experiences.

- Need more scholarships while in school.
- Need more time for lab class.
- Program would be better if dealerships took more interest in it.
- Get more employers to hire all Toyota students.
- Make it possible to take supporting classes towards an AA Degree while going to school.
- Toyota and Skyline are not supported properly by the dealerships.
- Toyota dealerships should provide more jobs for students.
- More work for advanced students.

The 16 employer's questionnaires, after a second mailing, produced 11 responses (Appendix #3). This questionnaire was sent to supervisors of Group I students employed in automotive positions.

- Question #1-#2 - All replies stated the students were presently employed.
- Question #3 - Was the student employed by your company as a result of his willingness to participate in the Program? Nine responded "yes" and two responded "no."
- Question #4 - Has your company's overall participation in the Skyline/Toyota Training Program proven to be a satisfactory procedure to hire entry level/apprentice mechanics? Nine responded "yes" and two responded "no."

- Question #5 - Will your company utilize the Skyline/Toyota Training Program procedure for hiring and training new entry level/apprentice mechanics in the future? Ten responded, eight responded "yes" and two responded "no."
- Question #6 - Is the classroom and hands-on training being provided by the Skyline/Toyota Training Program state of the art as practiced in the industry? Four responded "outstanding", three "very satisfactory," three "satisfactory," and one "needs improvement."
- Question #7 - Is your employee receiving training with the same tools and equipment currently used in the industry or similar? Three responded "outstanding," six "very satisfactory," and two "satisfactory."
- Question #8 - Does your employee receive exposure to the latest technical changes as they are introduced by industry in the Skyline/Toyota Training Program? Three responded "outstanding," five "very satisfactory, three "satisfactory," and one "needs improvement."
- Question #9 - Is the on-the-job training provided by your company being coordinated with the Skyline/Toyota Training Program? One "outstanding," six "very satisfactory," two "satisfactory," and two "needs improvement."

. Question #10 - <u>What could be done in the future to improve the Skyline/Toyota Training Program from your company's perspective?</u> Written comments follow:

- Send us more students out of this program.
- Teach students how to be cleaner.
- Mechanical smart is more important than being book smart.
- Provide us with more students like Andrew.
- Gordon is an excellent employee.
- Since this is supposed to be a Toyota program it should deal with Toyota products and procedures not general American vehicles and procedures.
- Try to have more classes around the slow part of the year and have the student at work during the busy time.
- They could provide us with more students like Ralph.
- I think students in this area find it difficult to make a long term commitment to the program because of the financial impact.
- If classes were at night students could work during the day.

Both students and their work supervisors responded very favorably to the program. The program is rated highly for its instruction, curriculum, and equipment, and appears to interface

well with the dealers at the operational level. Their comments reflect the same concerns outlined in other areas of this report.

Summary:

The College has performed well in meeting six of the eight objectives enumerated in the original proposal. (A) All training modules have been developed for the entire program. Learning objectives and evaluation procedures have been established for the periods of on-the-job training. (D) Instruction began in the fall semester of 1988 and has continued on through the 1990 school year as projected. (E) The College completed the ASE-NATEF self study for certification in all eight areas and was reviewed by the NATEF evaluation team during the spring of 1990. Certification was achieved in all areas. (F) The College has met with the Joint Apprenticeship Council and the State Division of Apprenticeship Standards and has received their assurance that the new curriculum for the Toyota T-TEN program will be approved for apprenticeship credit. (G) The College has an active advisory committee which meets regularly providing direction in curriculum planning, equipment acquisition and facilities. (H) The College is actively participating in the dissemination of information concerning the program and is constantly seeking to strengthen networking of information with other colleges involved in similar programs.

In addition to these objectives, the project has provided the College automotive program with a number of indirect benefits. The addition of equipment and training materials has

led to the revision and up-dating of the entire general automotive curriculum. The 280 hours of classroom training for the instructional staff in Toyota facilities has been important inservice training for regular automotive instruction. The project and the affiliation with Toyota has not only strengthened the automotive program's internal institutional ties in counseling and assessment but has promoted a closer relationship with feeder high schools that will lead to a 2+2 program. The additional funds, training materials and equipment has renewed interest within the college district in the Skyline Automotive Program and as a result has placed a high priority on the building of additional physical facilities.

(B) The College has been unable to meet the objectives both to recruit 20 students into the program in the fall of 1988 and 1989 and (C) to provide 40 work sites for the students recruited. These problems have been of continuing concern to the College and to Toyota Motor Sales, USA. The original agreement called for Toyota to provide a strong role in the recruitment of students and to provide a minimum of 20 new work stations each year for students enrolled in the program. For a number of reasons previously outlined in this report, Toyota has been unable to fulfill this agreement. Skyline College has attempted to overcome this problem by providing staff time to meet with non-Toyota shops and feeder high schools to publicize the program. Toyota and the College have worked together to seek a solution including substantial revision of the format (from three years to

two and a half and again to two years) that will more readily accommodate students in a full-time employment situation. New enrollment in the program was curtailed until an improved format is in place. The College has experienced problems in offering basic skills classes to Toyota students in 8-week sessions because of low enrollment. This commitment on the part of the College has not been met. The College continues to seek solutions to the problem of offering supplemental basic skills instruction in complementary formats.

Overall, the achievements of the program have overshadowed the shortcomings and the program has been judged sufficiently successful by the participants to warrant firm commitment to continuing development of the training partnership.

Appendix 1

T-TEN Enrollment History, page one

Student Last Name	G	Sx	Ethn Orig	Type Empl	Ori Su '88	Reg F '88	WE F '88	Reg Sp '89	WE Sp '89	Reg Su '89	Ori Su '89	Reg F '89	WE F '89	Reg Sp '90	Reg F '90	Reg Sp '91
		M									1					
		M			1											
	*	M	Asia	Deal	1	1	1	1	1	1		1	1	1	1	
	*	M	Cauc	Deal	1	1	1	1	1	1		1	1	1	1	
		F									W					
		M	Cauc	Deal							1	1	1	1	1	1
		F	Cauc	None				1		1		W				
		M			1											
		M			1											
		M													1	
		M			1											
		M			1											
		M			1											
		M									1					
		M			1											
	-	M			1											
		M	Cauc	Deal							1	1	1	1	1	1
		M									W					
		M			1											
		M			1											
		M	Asia	Deal							1	1	1			
	*	M	Cauc	Deal	1	1	1	1	1	1		1	1	1	1	
		M	Cauc	Deal	1	1	1	1	1	1		1	1			
		M			1											
		M			1											
		M									1					
		M			1											
		M			1											
		M	Cauc	Deal	1	1	1	W	W							
		M			1											
		M									1					
		M			1											
		M			1											
		M			1											
		M	Hisp	Deal								1	1	W	1	1	1
		M			1											
		M	Cauc	Inde								1	1	W	1	1	1
	*	M	Cauc	Deal	1	1		1	1	1		1	1	1	1	
		M			1											
		M			1											
		M		Inde											W	
		M						W	W							
		M			1											
		M			1											
		M			1											
		M	Cauc	Deal	1	1	1	1	1			W	W			
	*	M	Cauc	Deal				1	1	1		1	1	1	1	

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T-TEN Enrollment History, page two

Student Last Name	G	Sx	Ethn Orig	Type Empl	Ori Su '88	Project Period: Reg F '88	WE F '88	Reg Sp '89	WE Sp '89	Reg Su '89	Ori Su '89	Reg F '89	WE F '89	Reg Sp '90	Reg F '90	Reg Sp '91
		F						W							W	
		M									1					
		M			1											
		M			1											
		M									1					
		M	Cauc	Deal	1	1	1	1	1	1		W	W			
		M			1											
		M	Asia	unk	1	1										
	*	M	Cauc	Deal				1	1	1		1	1	1	1	
		M									1					
		M			1											
	*	M	Asia	Deal	1	1	1	1	1	1		1	1	1	1	
		M													1	
		M	Asia	Deal							1	1	1	1	1	1
		M			1											
	*	M	Hisp	Deal	1	1	1	1	1	1		1	1	1	1	
		M			1											
		M														W
		M									1					
		M	Asia	Inde	1	1	1	1	1	1		1	1	1		
		M	Asia	Deal							1	1	1	1	1	1
		M			1											
		M			1						1					
		M	Asia	Deal							1	1	1	1	1	1
		M	Cauc	Other							1	W	W			
		M			1											
		M	Asia	Deal	1	1	1			1						
	*	M	Asia	Deal	1	1	1	1	1	1		1	1	1	1	
		M			1											
		M									1					
		M									1					
		M			1											
TOTAL COMPLETED:					49	14	12	14	13	14	20	19	17	17	18	7

Key to abbreviations:

G = graduate; completed all program requirements: *
Sx = gender of student: Female, Male
Ethn Orig = Ethnic Origin: Asian, Caucasian, Hispanic
Type Empl = Type of Employer: Dealer, Indedpendent, Other, Unknown
Ori = Orientation course, Reg = Regular course, WE = Work Experience
Su = Summer, F = Fall, Sp = Spring
'88 = 1988, '89 = 1989, '90 = 1990, '91 = 1991
1 = enrolled and completed, W = withdrew before completing

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Appendix 2

R. M. Paul & Associates

P.O. Box 6537
Auburn, CA 95604-6537
(916) 367-2171

July 5, 1990

Dear

We recently sent you a questionnaire relating to your experiences and opinions as a student in the Skyline College/Toyota Technical Education Network Training Program. To date we have not received your reply.

Your assistance in completing the questionnaire is very important so that we may include your opinions in our evaluation of this program. In case you have misplaced the original questionnaire, we are sending you an additional copy.

If you can return this as soon as possible, we will greatly appreciate your cooperation. Your views remain a confidential part of the evaluation report.

Thank you for your assistance.

Sincerely,

R. M. Paul
R. M. Paul & Associates

RMP:re

Enclosures

R. M. Paul & Associates

P.O. Box 6537
Auburn, CA 95604-6537
(916) 367-2171

April 27, 1990

Dear

You have recently been a student in the Skyline College Toyota Technical Education Network Training Program and we need your help. The program, sponsored as a joint project between Toyota Motor Sales and Skyline College, was partially funded by a federal grant to the College. Under the conditions of this grant, it is necessary for the College to have the program evaluated by independent evaluators at the end of the grant term. R. M. Paul & Associates has been retained by the College for this purpose. Part of this evaluation is the collection of information from students who have participated in the program.

We ask your assistance in completing the enclosed questionnaire and returning it in the stamped envelope provided so that we may include your views as a confidential part of the evaluation report.

Thank you for your assistance in completing this important evaluation.

Sincerely,

R. M. Paul
R. M. Paul & Associates

RMP:re

Enclosures

SKYLINE COLLEGE
TOYOTA TECHNICAL EDUCATION NETWORK TRAINING
STUDENT'S PROGRAM EVALUATION QUESTIONNAIRE

1. Are you presently enrolled in the Skyline College Toyota Technical Education Network Training Program?
   Yes_____ No_____

2. When did you enroll in the program? Month_____ Year_____

3. If you are not presently enrolled, when did you drop from the program? Month_____ Year_____

4. Are you presently employed in the automotive service area?
   Yes_____ No_____

5. Is your present employment a result of your enrollment in the Skyline College/Toyota Training Program?
   Yes_____ No_____

6. How has the Skyline College/Toyota Training Program met commitments promised at the time of your enrollment?
   Outstanding_____ Very Satisfactory____ Satisfactory____
   Needs Improvement____ Inadequate____

7. How has the Skyline College/Toyota Training Program provided classroom and hands-on instruction to meet the requirements of your employment?
   Outstanding_____ Very Satisfactory____ Satisfactory____
   Needs Improvement____ Inadequate____

8. How has the Skyline College/Toyota Training Program provided tools and equipment, the same or similar, to that found on your job?
   Outstanding_____ Very Satisfactory____ Satisfactory____
   Needs Improvement____ Inadequate____

9. Has your employer provided additional training and support on the job coordinated with the Skyline College/Toyota Training Program?
   Outstanding_____ Very Satisfactory____ Satisfactory____
   Needs Improvement____ Inadequate____

10. What could be done to improve the Skyline College/Toyota Training Program in the future?

    Comments:

Appendix 3

R. M. Paul & Associates

P.O. Box 6537
Auburn, CA 95604-6537
(916) 367-2171

April 27, 1990

Re:

Dear

As the employer of a student participating in the Skyline College/Toyota Technical Education Network Training Program, a joint training program sponsored by Toyota Motor Sales and Skyline College, we need your assistance. This program is partially funded by a federal grant to the College and under the terms of the grant the College is required to have an independent evaluation of the project at the end of the grant term. The firm of R. M. Paul & Associates has been retained to complete this evaluation. Part of this report will be the collection of information from employers of students who have participated in the program.

In order to include the employer's perspective pertaining to the student's performance on the job as it relates to his training we ask that you complete the enclosed questionnaire and return it in the stamped envelope provided to our office. We assure you that the information you submit will be kept confidential.

Thank you for your assistance in completing this evaluation.

Sincerely,

R. M. Paul
R. M. Paul & Associates

RMP:re

Enclosures

SKYLINE COLLEGE
TOYOTA TECHNICAL EDUCATION NETWORK TRAINING
EMPLOYER'S PROGRAM EVALUATION QUESTIONNAIRE

Regarding Student_____

1. Is the student presently employed by your company in the automotive service area? Yes_____ No_____

2. If the student is <u>not presently</u> employed by your company, when did he leave your employment? Month_____ Year_____

3. Was the student employed by your company as a result of his willingness to participate in the Skyline/Toyota Training Program? Yes_____ No_____

4. Has your company's overall participation in the Skyline/ Toyota Training Program proven to be a satisfactory procedure to hire entry level/apprentice mechanics? Yes_____ No_____

5. Will your company utilize the Skyline/Toyota Training Program procedure for hiring and training new entry level/ apprentice mechanics in the future? Yes_____ No_____

6. Is the classroom and hands-on training being provided by the Skyline/Toyota Training Program state of the art as practiced in the industry?
Outstanding____ Very Satisfactory____ Satisfactory____
Needs Improvement____ Inadequate____

7. Is your employee receiving training with the same tools and equipment currently used in the industry or similar?
Outstanding____ Very Satisfactory____ Satisfactory____
Needs Improvement____ Inadequate____

8. Does your employee receive exposure to the latest technical changes as they are introduced by industry in the Skyline/ Toyota Training Program?
Outstanding____ Very Satisfactory____ Satisfactory____
Needs Improvement____ Inadequate____

9. Is the on-the-job training provided by your company being coordinated with the Skyline College/Toyota Training Program?
Outstanding____ Very Satisfactory____ Satisfactory____
Needs Improvement____ Inadequate____

10. What could be done in the future to improve the Skyline/Toyota Training Program from your company's perspective?

Comments: